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EXAMINER
CHRISS, ANDREW W

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/782,390	ZININ, ALEXEY D.
Office Action Summary	Examiner	Art Unit	
	Andrew Chriss	2416	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>27 February 2009</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-38</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-38</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>19 February 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   Applicant's amendment, filed February 27, 2009, has been entered and carefully
considered. Claims 1-38 are currently pending.

2.   Objection to the abstract is withdrawn in light of Applicant's amendment.

Claim Rejections - 35 USC § 112

3.   The text of those sections of Title 35, U.S. Code not included in this action can be found
in a prior Office action.

4.   **Claims 20-38** are rejected under 35 U.S.C. 112, first paragraph, because the claimed
apparatus comprising a network element comprises a single means and therefore is regarded as
undue breadth. Per MPEP 2164.08(a): "A single means claim, i.e., where a means recitation
does not appear in combination with another recited element of means, is subject to an undue
breadth rejection under 35 U.S.C. 112, first paragraph. *In re Hyatt*, 708 F.2d 712, 714-715, 218
USPQ 195, 197 (Fed. Cir. 1983) (A single means claim which covered every conceivable means
for achieving the stated purpose was held nonenabling for the scope of the claim because the
specification disclosed at most only those means known to the inventor.) When claims depend on
a recited property, a fact situation comparable to Hyatt is possible, where the claim covers every
conceivable structure (means) for achieving the stated property (result) while the specification
discloses at most only those known to the inventor."

5.   The text of those sections of Title 35, U.S. Code not included in this action can be found
in a prior Office action.

6.   **Claims 4-16 and 23-36** are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention. The claim language cites a method step and apparatus

functionality of "applying interface groups." However, Applicant's specification is not clear as

to what this step comprises. Applicant's specification discloses comparing an interface attributes

of inbound and outbound interfaces (paragraphs 0058 and 0062) which results in a specific

routing behavior. However, the step/functionality of applying interface groups, given its

broadest reasonable interpretation, could be interpreted as an interface assignment, rather than

the disclosed comparison. For examination purposes, Examiner assumes that the step of

applying an interface group comprises assigning an interface group.

Claim Rejections - 35 USC § 103

7.   The text of those sections of Title 35, U.S. Code not included in this action can be found

in a prior Office action.

8.   **Claims 1, 2, 17, 20, 21, and 36** are rejected under 35 U.S.C. 103(a) as being unpatentable

over McDysan et al (United States Patent 7,046,680), hereinafter McDysan, in view of

Henderson et al (United States Patent Application Publication US 2003/0152078 A1), hereinafter

Henderson.

     Regarding Claims 1 and 20, McDysan discloses a method and access device (Figure 3,

40) comprising a marker/policer 82 that marks a packet by setting bits in a DiffServ Type of

Service (TOS) byte in an IP packet header (column 7, line 58-column 8, line 4), which is known

by one of ordinary skill in the art to comprise Layer-3 control information. However, McDysan

does not expressly disclose encapsulating the packets at Layer-2. In the same field of endeavor, Henderson discloses a MAC (i.e., Layer 2) header representing the outermost encapsulation of an IP packet (paragraph 0094). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Layer 2 encapsulation disclosed in Henderson with the Diffserv packet marking disclosed in McDysan in order to perform packet editing and filtering at an OSI layer lower than the application layer (see Henderson, paragraphs 0005 and 0006).

      Regarding Claims 2 and 21, McDysan discloses setting a DiffServ TOS byte in an IP packet header, as described with regards to Claim 1 above, therefore equivalent to Applicant's claimed functionality of marking the packets using a unique protocol identifier.

      Regarding Claims 17 and 36, McDysan does not expressly disclose encapsulating the packets according to control encapsulation. In the same field of endeavor, Henderson discloses a MAC (i.e., Layer 2) header representing the outermost encapsulation of an IP packet (paragraph 0094). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Layer 2 encapsulation disclosed in Henderson with the Diffserv packet marking disclosed in McDysan in order to perform packet editing and filtering at an OSI layer lower than the application layer (see Henderson, paragraphs 0005 and 0006).

9.   **Claims 3 and 22** rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan in view of Henderson as applied to claims 1 and 20 above, and further in view of Nakamichi et al (United States Patent Application Publication US 2002/0085498 A1), hereinafter Nakamichi. McDysan and Henderson disclose all of the limitations of Claims 1 and 20, as described above. However, the references do not expressly disclose marking the packets using a link-local MPLS

label. In the same field of endeavor, Nakamichi discloses using a "link state type" field in a link

state advertisement (LSA) in an MPLS network. Specifically, Nakamichi discloses a value for

said field that denotes "link-local," indicating that the flooding scope is within a local

(sub)network (paragraphs 0065 and 0066). It would have been obvious to one of ordinary skill

in the art at the time the invention was made to combine the link state advertisement disclosed in

Nakamichi with the marker/policer disclosed in McDysan, as modified above, in order to allow a

node in a communications network to collect traffic information and perform load sharing

depending on traffic conditions.

10.   **Claims 4-12 and 23-31** rejected under 35 U.S.C. 103(a) as being unpatentable over

McDysan in view of Henderson as applied to claims 1 and 20 above, and further in view of Yu et

al (United States Patent Application Publication US 2004/0010583 A1), hereinafter Yu.

        Regarding Claims 4 and 23, McDysan and Henderson disclose all of the limitations of

Claims 1 and 20, as described above. Further, McDysan discloses a determination by the

marker/policer as to when marking a packet comprising IP control information should be

performed (column 7, line 58-column 8, line 4). However, the references do not expressly

disclose applying interface groups. In the same field of endeavor, Yu discloses the use of

interface groups to facilitate virtual router redundancy protocol (VRRP) failover. The interface

may include an IP address, VPN tunnel, WAN physical interface, among others (paragraph

0022). The interface group is assigned a name to enable it to be referenced at a later time

(paragraph 0025). It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the interface group application disclosed in Yu with the control

packet marking disclosed in McDysan, as modified above, in order to withstand failures of network device components, without triggering unnecessary failover in a network device.

Regarding Claims 5 and 24, Yu further discloses packet communications within a particular interface group (Figure 1, interface group defined between interfaces 'a' and 'd' within network device A). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interface group application disclosed in Yu with the control packet marking disclosed in McDysan, as modified above, in order to withstand failures of network device components, without triggering unnecessary failover in a network device.

Regarding Claims 6 and 25, Yu further discloses interface groups assigned to backbone interfaces (Figure 4, static tunnel through Internet between network device A and network device B). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interface group application disclosed in Yu with the control packet marking disclosed in McDysan, as modified above, in order to withstand failures of network device components, without triggering unnecessary failover in a network device.

Regarding Claims 7 and 26, Yu further discloses interface groups assigned to interfaces with customer-specific interface groups (Figure 4, interface 'a' between network device A and Host PC). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interface group application disclosed in Yu with the control packet marking disclosed in McDysan, as modified above, in order to withstand failures of network device components, without triggering unnecessary failover in a network device.

Regarding Claims 8 and 27, Yu further discloses applying interface groups to peer interfaces (Figure 4, static tunnel between network device A and network device D). It would

have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interface group application disclosed in Yu with the control packet marking disclosed in McDysan, as modified above, in order to withstand failures of network device components, without triggering unnecessary failover in a network device.

Regarding Claims 9-12 and 28-31, Yu further discloses applying interface groups to packet communications between interface groups (Figure 4, connections between peer, backbone, and customer networks at network device A). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interface group application disclosed in Yu with the control packet marking disclosed in McDysan, as modified above, in order to withstand failures of network device components, without triggering unnecessary failover in a network device.

11.   **Claims 13 and 32** rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan in view of Henderson and Yu, as applied to claims 4 and 23 above, and further in view of Chuah et al (United States Patent Application Publication US 2004/0054924 A1), hereinafter Chuah. McDysan, Henderson, and Yu disclose all of the limitations of Claim 4, as described above. However, the aforementioned references do not expressly disclose applying interface groups to communication of ICMP packets. In the same field of endeavor, Chuah discloses routers performing probabilistic marking of IP packets or intentional ICMP trace-backs in order to trace the source of an attack (paragraph 0062). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the ICMP trace-back disclosed in Chuah with the marker/policer disclosed in McDysan, as modified by Henderson and Yu above, in order to detect and block IP packets involved in DDOS attacks.

12.   **Claims 14 and 33** rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan

in view of Henderson and Yu, as applied to claims 4 and 23 above, and further in view of Pan et

al (United States Patent 7,336,615), hereinafter Pan. McDysan, Henderson, and Yu disclose all

of the limitations of Claim 4, as described above. However, the aforementioned references do

not expressly disclose applying interface groups to communication of ping packets. In the same

field of endeavor, Pan discloses assigning predetermined port numbers to LSP ping messages

(column 14, lines 48-55). It would have been obvious to one of ordinary skill in the art at the

time the invention was made to combine ping message port assignment disclosed in Pan with the

marker/policer disclosed in McDysan, as modified by Henderson and Yu above, in order to

automatically detect the status of a label switched path.

13.   **Claims 15 and 34** rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan

in view of Henderson and Yu, as applied to claims 4 and 23 above, and further in view of

Fotedar (United States Patent Application Publication US 2004/0085965 A1). McDysan,

Henderson, and Yu disclose all of the limitations of Claim 4, as described above. However, the

aforementioned references do not expressly disclose applying interface groups to communication

of traceroute packets. In the same field of endeavor, Fotedar discloses assignment of traceroute

packets to a virtual router address indicative of a loopback interface (paragraph 0011). It would

have been obvious to one of ordinary skill in the art at the time the invention was made to

combine the traceroute packet assignment disclosed in Fotedar with the marker/policer disclosed

in McDysan, as modified by Henderson and Yu above, in order to enable direct communications

between a virtual router and a virtual address, without having to know a physical address.

14.   **Claims 18 and 37** rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan

in view of Henderson as applied to claims 1 and 20 above, and further in view of Johansson

(United States Patent 6,061,330). McDysan and Henderson disclose all of the limitations of

Claims 1 and 20, as described above. However, the references do not expressly disclose

receiving unmarked control packets using rate-limited queues. In the same field of endeavor,

Johansson discloses an ATM switch receiving packets into rate-limited queues (Figure 1, 116;

Figure 4a, 410). It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the rate-limited queuing disclosed in Johansson with the

unmarked control packets (i.e., packets received prior to being marked) disclosed in McDysan,

as modified above, in order to perform fair queuing scheduling using both buffer occupancy and

input rate.

15.   **Claims 19 and 38** rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan

in view of Henderson as applied to claims 1 and 20 above, and further in view of Hussey et al

(United States Patent Application Publication US 2001/0049744 A1), hereinafter Hussey.

McDysan and Henderson disclose all of the limitations of Claims 1 and 20, as described above.

Further, McDysan discloses receiving packets (Figure 3). However, the aforementioned

references do not expressly disclose processing the received packets at a line rate. In the same

field of endeavor, Hussey discloses a processor pool aggregation technique wherein a received

packet data stream is capable of being processed at a line rate (paragraph 0050). It would have

been obvious to one of ordinary skill in the art at the time the invention was made to combine the

packet processing disclosed in Hussey with the marker/policer disclosed in McDysan, as

modified above, in order to improve data processing within a data-handling device.

Response to Arguments

16.   Applicant's arguments filed February 27, 2009 regarding rejection of Claims 20-38 under

35 U.S.C. 112, first paragraph, have been fully considered but they are not persuasive. Applicant

states that the claim does not recite "means for" and therefore does not invoke 35 U.S.C. 112,

sixth paragraph. However, Examiner is not attempting to invoke 35 U.S.C. 112, sixth paragraph,

in order to determine the metes and bounds of said rejected claims. Rejecting claims under 35

U.S.C. 112, first paragraph, requires a single means recitation (i.e., structure, component), but

not specifically the claim language "means for" or "step for" as described in MPEP 2164.08(a).

In the instant application, the means recitation is the claimed "network element," which does not

appear in combination with another recited element of means (i.e., another structural element or

component). Therefore, rejection of Claims 20-38 under 35 U.S.C. 112, first paragraph, is

maintained.

17.   Applicant's arguments filed February 27, 2009 regarding rejection of Claims 4-16 and 23-

36 under 35 U.S.C. 112, second paragraph, have been fully considered but they are not

persuasive. Applicant states that Examiner mischaracterizes what claim 4-16 and 23-36 actually

recite and that claims that depend from Claims 4 and 23 recite subject matter beyond what

Examiner alleges. Examiner respectfully disagrees. The claim language "applying interface

groups" is not clearly defined in the specification. Despite the claims at issue reciting alleged

results of the aforementioned functionality, it is unclear what the step of "applying interface

groups" comprises. In order to further prosecution, Examiner has given said claim language its

broadest reasonable interpretation in view of the specification, as set forth in the rejection above.

Rejection of said claims under 35 U.S.C. 112, second paragraph, is maintained.

18.   Applicant's arguments filed February 27, 2009 regarding rejection of Claims 1-38 under

35 U.S.C. 103(a) have been fully considered but they are not persuasive.

         Regarding Claims 1 and 20, Applicant states that the cited portions of the cited references

do not disclose or suggest "marking packets carrying the Layer-3 control information" or

"encapsulating the packets at Layer-2." Examiner respectfully disagrees. Examiner submits that

the terms of art "Layer-3" and "Layer-2" refer to layers within the OSI 7-Layer Reference

Model, which is a conceptual framework used in the art to model data communications between

computers (see *The OSI Reference Model*, page 6, as background). Layer-3 in the OSI 7-Layer

Reference Model is the Network Layer, which defines network addresses and defines a logical

network layout (see *The OSI Reference Model*, page 3, as background). A known Network

Layer implementation is Internet Protocol (IP) (see *The OSI Reference Model*, page 3, as

background). With regards to the claim limitation "marking packets carrying the Layer-3 control

information," McDysan discloses a marker/policer that marks a packet by setting bits in a

DiffServ Type of Service (TOS) byte in an IP packet header (column 7, line 58-column 8, line

4). As IP is known in the art to represent a real-world implementation of the OSI 7-Layer

Reference Model, McDysan therefore discloses marking packets comprising Layer-3 control

information (i.e., a TOS byte). Returning to the OSI 7-Layer Reference Model, Layer-2 in the

model is the Data Link Layer, which provides physical addressing, as opposed to the network

addressing in Layer-3 (see *The OSI Reference Model*, pages 3-4, as background). The Data Link

Layer is subdivided into two sublayers: Logical Link Control and Media Access Control (MAC)

(see *The OSI Reference Model*, pages 3-4, as background). With regards to the claim limitation

"encapsulating the packets at Layer-2," Henderson discloses a MAC (i.e., Layer 2) header

representing the outermost encapsulation of an IP packet (paragraph 0094).

Regarding Claims 2 and 21, Applicant states that the DiffServ TOS byte in an IP packet

header disclosed in McDysan fails to disclose or suggest the claim limitation of a "unique

protocol identifier." Examiner respectfully disagrees. The claim limitation "unique protocol

identifier" is broad and does not explicitly or inherently define what is unique about the protocol

identifier (i.e., a feature in or about the protocol identifier is differentiated from another protocol

identifier). Examiner has therefore given said limitation its broadest reasonable interpretation in

view of the specification. A DiffServ TOS byte is known in the art to comprise 5 unique values

that indicate how an IP packet should be treated (see RFC 1349, page 4, as background).

Regarding Claims 17 and 36, Applicant states that the cited portions of the cited

references fail to disclose or suggest "encapsulating the packets according to control

encapsulation." Examiner respectfully disagrees. Given its broadest reasonable interpretation,

Examiner submits that an encapsulation scheme utilized in accordance with

packet/network/communication control reads on the claimed "control encapsulation." As such,

the Media Access Control encapsulation disclosed by Henderson described above reads on the

claim limitation, as the Layer-2 in the OSI 7-Layer Reference Model controls physical

addressing in data communications.

Regarding Claims 3 and 22, Applicant states that the cited portions of the cited references

fail to disclose or suggest "marking the packets using a link-local MPLS label." Examiner

respectfully disagrees. Paragraphs 0065 and 0066 of Nakamichi expressly discloses a link-state

advertisement (LSA) comprising a "link state type" which, when set to a value of "9", indicates

that the LSA is "link-local." Regarding Applicant's argument that that no motivation is alleged

to combine the link-local MPLS label disclosed in Nakamichi with the marking and

encapsulation disclosed by the combination of McDysan and Henderson, Examiner submits that

a motivation was provided in the Office Action mailed November 24, 2008: "It would have been

obvious to one of ordinary skill in the art at the time the invention was made to combine the link

state advertisement disclosed in Nakamichi with the marker/policer disclosed in McDysan, as

modified above, in order to allow a node in a communications network to collect traffic

information and perform load sharing depending on traffic conditions" (further see paragraphs

0003 and 0012 of Nakamichi).

　　　　Regarding Claims 4-12 and 23-31, Applicant states that the cited art fails to disclose or

suggest "applying interface groups" to enable various results. However, as stated above, the

claim language "applying interface groups" is not clearly defined in the specification. Despite

the claims at issue reciting alleged results of the aforementioned functionality, it is unclear what

the step of "applying interface groups" actually comprises. In order to further prosecution,

Examiner has given said claim language its broadest reasonable interpretation in view of the

specification to comprise assignment of an interface for communications, as set forth in the

rejection of Claims 4-16 and 23-36 under 35 U.S.C. 112, second paragraph, above. Accordingly,

Yu discloses assigning interfaces to communicate within and between various types of networks

(see Figures 1 and 4 and paragraphs 0022 and 0025). Further regarding Claims 5 and 24, Yu

discloses packet communications between interfaces 'a' and 'd' of Network Device A in Figure

1. Further regarding Claims 6 and 25, Yu discloses communications between the Network

Device A and the Internet (i.e., backbone given its broadest reasonable interpretation) (Figure 4).

Further regarding Claims 7 and 26, Yu discloses communications with a Host PC (i.e., customer-

specific interface group given its broadest reasonable interpretation) in Figure 4 using interface

'a' in Network Device A. Further regarding 8 and 27, Yu discloses communications between

Network Device A and Network Device B (i.e., peer devices on a LAN given its broadest

reasonable interpretation) via interfaces 'a' and 'b.' Further regarding Claims 9-12 and 28-31, Yu

discloses communications between the Internet (i.e., backbone given its broadest reasonable

interpretation) the Host PC (i.e., customer-specific interface group given its broadest reasonable

interpretation), Network Device A and Network Device B (i.e., peer devices on a LAN given its

broadest reasonable interpretation) via interfaces 'a' and 'd' in Network Device A and interfaces

'b' and 'e' in Network Device B in Figure 4.

Regarding Claims 13 and 32, Applicant states that the cited portions of the cited

references fail to disclose or suggest "applying interface groups to communication of ICMP

packets" and further states that the cited portion of Chuah teaches away from the claimed subject

matter. Examiner respectfully disagrees. As stated above, the claim language "applying

interface groups" is not clearly defined in the specification. Despite the claims at issue reciting

alleged results of the aforementioned functionality, it is unclear what the step of "applying

interface groups" actually comprises. In order to further prosecution, Examiner has given said

claim language its broadest reasonable interpretation in view of the specification to comprise

assignment of an interface for communications, as set forth in the rejection of Claims 4-16 and

23-36 under 35 U.S.C. 112, second paragraph, above. With regards to the claim limitation

"applying interface groups to communication of ICMP packets," Examiner notes that Chuah is

not relied upon to teach "applying interface groups," which is disclosed by Yu as described

above. Rather, Chuah is relied upon to disclose the communication and marking of ICMP

packets (paragraph 0062). Examiner further notes that all instances of the typographical error

"as modified by Ho" have been corrected in this office action.

Regarding Claims 14 and 33, Applicant states that the cited portions of the cited

references fail to disclose or suggest "applying interface groups to communication of ping

packets" and further states that the cited portion of Pan teaches away from the claimed subject

matter. Examiner respectfully disagrees. As stated above, the claim language "applying

interface groups" is not clearly defined in the specification. Despite the claims at issue reciting

alleged results of the aforementioned functionality, it is unclear what the step of "applying

interface groups" actually comprises. In order to further prosecution, Examiner has given said

claim language its broadest reasonable interpretation in view of the specification to comprise

assignment of an interface for communications, as set forth in the rejection of Claims 4-16 and

23-36 under 35 U.S.C. 112, second paragraph, above. With regards to the claim limitation

"applying interface groups to communication of ping packets," Pan discloses assigning

predetermined port numbers to LSP ping messages (column 14, lines 48-55). The interpretation

of "applying interface groups" applied in Claims 14 and 33 does not deviate from the

interpretation applied to Claims 4 and 23, on which Claims 14 and 33 depend. Specifically, the

interpretation is not limited with regards to a type of interface being assigned (e.g., virtual,

physical, etc.). Therefore, Applicant's statement that the combination would be rendered

inoperable is not persuasive.

Regarding Claims 15 and 34, Applicant states that the cited portions of the cited references fail to disclose or suggest "applying interface groups to communication of traceroute packets" and further states that the cited portion of Potedar teaches away from the claimed subject matter. Examiner respectfully disagrees. As stated above, the claim language "applying interface groups" is not clearly defined in the specification. Despite the claims at issue reciting alleged results of the aforementioned functionality, it is unclear what the step of "applying interface groups" actually comprises. In order to further prosecution, Examiner has given said claim language its broadest reasonable interpretation in view of the specification to comprise assignment of an interface for communications, as set forth in the rejection of Claims 4-16 and 23-36 under 35 U.S.C. 112, second paragraph, above. With regards to the claim limitation "applying interface groups to communication of traceroute packets," Fotedar discloses assignment of traceroute packets to a virtual router address indicative of a loopback interface (paragraph 0011). The interpretation of "applying interface groups" applied in Claims 14 and 33 does not deviate from the interpretation applied to Claims 4 and 23, on which Claims 15 and 34 depend. Specifically, the interpretation is not limited with regards to a type of interface being assigned (e.g., virtual, physical, etc.). Therefore, Applicant's statement that the combination would be rendered inoperable is not persuasive.

Regarding Claims 18 and 37, Applicant states that the cited portions of the cited references do not disclose or suggest "receiving unmarked control packets using rate-limited queues." Examiner respectfully disagrees. Figure 4a, step 410 of Johansson "determines when a predetermined number Input RateLimit of Cells are received" (column 10, lines 45-47). As such, Johansson provides a general teaching of a rate-limited queue receiving packets. Examiner notes

that the claim limitation does not require the rate-limited queue to be in an input or output device and further notes that the input and output device disclosed in Johansson represent a connection between an input and output port of a switch (column 3, lines 51-55).

Regarding Claims 19 and 38, Applicant states that the cited portions of the cited references do not disclose or suggest "processing the received packets at a line rate." Examiner respectfully disagrees. Hussey discloses a processor pool aggregation technique wherein a communication device "receives a packet data stream via the communication network…at a line rate that might otherwise overwhelm the processing capabilities of the NIC…and result in dropped packets and reduced quality of service" (paragraph 0050). The cited portion of Hussey provides a general teaching that a device receives a packet data stream at a line rate. Applicant's statement that no evidence is provided that the purported combination "would not otherwise overwhelm the processing capabilities of the NIC…and result in dropped packets and reduced quality of service" is not material to the patentability of the claims under 35 U.S.C. 103(a). Hussey is in the same field of endeavor (i.e., data packet processing) as both McDysan and Henderson and therefore constitutes analogous art. Further, Hussey provides a motivation on the part of one of ordinary skill in the art to combine the general teaching of line-rate processing with the teachings of McDysan and Henderson, in that efficiency when processing data in a device and accessing data within said device needs to improved by reducing frequent access to external memory (see paragraphs 0004 through 0006 of Hussey).

Conclusion

19.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE
MONTHS from the mailing date of this action. In the event a first reply is filed within TWO
MONTHS of the mailing date of this final action and the advisory action is not mailed until after
the end of the THREE-MONTH shortened statutory period, then the shortened statutory period
will expire on the date the advisory action is mailed, and any extension fee pursuant to 37
CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,
however, will the statutory period for reply expire later than SIX MONTHS from the mailing
date of this final action.

Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Andrew Chriss whose telephone number is (571)272-1774. The
examiner can normally be reached on Monday - Friday, 7:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, William Trost can be reached on 571-272-7872. The fax phone number for the
organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent
Application Information Retrieval (PAIR) system. Status information for published applications
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information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Andrew Chriss
Examiner
Art Unit 2416
6/2/2009

/A. C./
Examiner, Art Unit 2416

/William Trost/
Supervisory Patent Examiner, Art Unit 2416